DOCUMENT RESUME

ED 278 297 HE 019 963

TITLE	A Generation of Failure: The Case for Testing and Remediation in Texas Higher Education. Final Report and Recommendations of the Committee on Testing.
INSTITUTION	Texas Coll. and Univ. System, Austin. Coordinating Board.
PUB DATE	17 Jul 86
NOTE	61p.
AVAILABLE FROM	Texas College and University System, Coordinating Board, Austin, TX.
PUB TYPE	Reports - Descriptive (141)
EDRS PRICE	MF01/PC03 Plus Postage.
DESCRIPTORS	*Academic Standards; Advisory Committees; *Basic Skills; *Educational Assessment; *Educational Testing; Higher Education; Needs Assessment; *Remedial Programs; State Colleges; State Programs; *State Standards; Student Placement
IDENTIFIERS	College Sophomores; *Texas

ABSTRACT

The merits of a state testing program that would measure the basic skills of college students and provide a basis for improvement was studied in Texas in 1985 by the Committee on Testing. Basic skills among colleges students and the use of postsecondary testing and remediation programs were studied in several states. The review included various types of tests and their merits, the impact of testing on minority students, the implications of requiring a test at the sophomore level, and the effectiveness of remedial and developmental education programs. Committee members held nine meetings, visited testing programs in Florida and New Jersey, heard the views of employers, and conducted five public hearings throughout Texas. Recommendations of the committee include the following: that (1) by 1989, freshmen at public colleges be tested in reading, writing, and mathematics skills at levels required to perform effectively in college; (2) that a strong advising program be developed so that appropriate course placement occurs; (3) that nondegree credit remedial opportunities be offered at public colleges; and (4) that remediation be required when a component of the basic skills test is failed. (SW)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED278297

A GENERATION OF FAILURE

THE CASE FOR TESTING AND REMEDIATION IN TEXAS HIGHER EDUCATION

FINAL REPORT AND RECOMMENDATIONS
OF THE COMMITTEE ON TESTING
to the
COORDINATING BOARD,
TEXAS COLLEGE AND UNIVERSITY SYSTEM

BEST COPY AVAILABLE

July 17, 1986

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☒ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
TEXAS COORDINATING BOARD
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

HE 019 163

COMMITTEE ON TESTING

Coordinating Board, Texas College and University System

Robert L. Hardesty, President, Southwest Texas State University, Committee Chair

Larry Johnson, Regent, Texas Tech University
Dr. H. Paul Kelley, Director of the Measurement and Evaluation Center, The University of Texas at Austin
Dr. George Magner, Professor of Social Work, University of Houston-University Park
Dr. Miguel A. Nevarez, President, Pan American University
Laurie Plessala, Student, Angelo State University
Dr. Ruth Shaw, President, El Centro College
Dr. Leonard H. O. Spearman, President, Texas Southern University
Sister Elizabeth Anne Sueltenfuss, President, Our Lady of the Lake University, San Antonio
James R. Vasquez, Superintendent, Edgewood Independent School District, San Antonio
Dr. Marvin Veselka, Assistant Commissioner for Assessment, Texas Education Agency
Dr. Jim M. Williams, President, Grayson County College

Staff

Dr. Joan Matthews, Program Director, Coordinating Board, Texas College and University System
Carol Dochen, Acting Director, Student Learning Assistance Center, Southwest Texas State University
Louise Iscoe, Director of University Relations, Southwest Texas State University
Dr. Leatha Miloy, Vice President for Student and Institutional Relations, Southwest Texas State University

A GENERATION OF FAILURE:

The Case for Testing and Remediation
in Texas Higher Education

Table of Contents

Executive Summary	1
The Committee and Its Mandate	7
Identifying the Problem	9
Examining Potential Solutions	13
Committee Recommendations	16
1. Basic Skills Test	16
2. Advising Programs	22
3. Remedial Opportunities	23
4. Required Remediation	30
5. Evaluation	33
6. Test Development	34
7. Program Funding	38
Conclusion	48
References	51
Appendices	
Committee Itinerary	52
Acknowledgements	55

A GENERATION OF FAILURE:
The Case for Testing and Remediation
in Texas Higher Education

EXECUTIVE SUMMARY

Every year more than 110,000 freshmen enter Texas public colleges and universities. Of these, at least 30,000 cannot read, communicate, or compute at levels needed to perform effectively in higher education. Some become college drop-outs -- not because they lack the ability, but because they lack the skills. Others receive degrees without ever mastering basic skills. The tragedy is that we often do not know they are deficient until it is too late to help them. We do not know who they are or where they are. But we do know they represent a generation of failure in our educational system.

When our colleges and universities graduate thousands of students each year who cannot write a clear sentence or compute a simple mathematical problem, we have cast a shadow on the quality of our degrees and the integrity of our diplomas.

For ten months the Committee on Testing of the Coordinating Board, Texas College and University System,

studied the need for identifying and assisting students who are qualified to enter college but who lack the basic skills needed to perform effectively in all their courses.

The committee held nine meetings, visited two states that have implemented testing programs, listened to experts on testing, interviewed representatives of the business community to hear the views of employers, and conducted five hearings around the state to obtain the views of educators, students, concerned citizens, and policymakers. We learned that the basic skills problem is one of enormous magnitude. We learned also that it can be corrected -- that students deficient in basic skills, when identified early, can benefit greatly from remedial instruction. In fact, with sufficient remediation they are three times more likely to be successful in college than those who need such instruction but do not receive it.

First, however, they must be identified -- and that requires a statewide assessment program.

Based on the findings of our study, the Committee on Testing unanimously makes the following recommendations:

1. We recommend that beginning in the fall of 1989, or as soon thereafter as feasible, all freshmen entering a public college or university in Texas be tested in reading, writing, and mathematics skills at levels

required to perform effectively in college. The test should be uniform across institutions and should be administered after admission. In no case should such a test bar entry to any student otherwise qualified; this assessment should be a tool of the education process, not the selection process.

2. We recommend that colleges and universities develop strong advising programs so that appropriate course placement occurs early in the student's degree program.

3. We recommend that each public institution be required to offer or make available nondegree credit remedial opportunities on its own campus to those students identified by the test as needing assistance.

4. We recommend that remediation be required when a component of the basic skills test is failed. All components of the test must be passed on or before the completion of 60 semester credit hours of degree credit. If not, further course work would be limited to lower division courses until all components of the test have been passed.

5. We recommend that each college and university be required to evaluate the results and effectiveness of remediation and report annually to the Coordinating Board.

6. We recommend that the Coordinating Board be directed to have these tests developed with the active participation at the decision-making level of faculty members from Texas colleges and universities.

7. We recommend that the legislature provide the necessary funding to develop and administer the tests and to support remediation. We would oppose a statewide basic skills test without the necessary financial support, especially for remediation.

We believe that the implementation of these recommendations is absolutely imperative if we are to prevent another generation of failure. Higher education can no longer afford to ignore the needs of thousands of bright, young students simply because the public schools have failed to demand of them the basic skills mastery they need to become more productive citizens.

Further, we believe that an assessment and remediation program is the best way to improve the quality of education for all students. By developing fundamental skills in remedial courses and through other assistance, the level of instruction in regular college classes improves because the quality of the class itself is better and can rise to a greater challenge.

A GENERATION OF FAILURE:

The Case for Testing and Remediation

in Texas Higher Education

Every year thousands of young Texans fall between the academic cracks. They are high school graduates; most of them are bright. They are qualified to attend college but many of them won't succeed -- not because they lack the ability, but because they lack the skills.

They are not alone. Across the nation, the three Rs are making headlines. Despite having one of the best and most extensive education systems in the world, America is producing high school graduates who have failed to master the basic skills of reading, writing, or mathematics. Even worse, the nation's colleges and universities are perpetuating the problem.

In recent months, some disturbing statistics have come to light.

. Nationwide, forty percent of entering college students appear to need remedial education. Many of them complete college without much improvement. The Southern Regional Education Board reports, "Increasing numbers of employers complain that the communication and computation skills of college graduates are

deficient." The knowledge that many of the students who lack basic skills have received passing grades and in many cases baccalaureate degrees is, notes SREB, "disquieting."

- In Texas, of the approximately 30,000 students who took the Pre-Professional Skills Test (PPST) from 1984 to 1986 to qualify for admission to teacher education programs, 30 percent failed to pass the test; and of those who took the test more than once, approximately half continued to fail.
- Math skills are the worst. Remedial math courses offered by America's public four-year colleges increased by 72 percent between 1975 and 1980, and some estimates indicate that as many as 65 percent of our nation's freshmen are math deficient.

Virtually every educator can back these statistics with horror stories about bright students who are woefully ignorant when it comes to writing a clear sentence, communicating a thought or idea, or computing a simple math problem. The exact dimension of the problem in Texas is not known, but the indicators are clear: too many Texas students do not read, communicate, or compute at the college-level.

We do not know who they are or where they are, but we do know that they represent a generation of failure in our educational system -- a failure we can no longer afford to ignore.

THE COMMITTEE AND ITS MANDATE

Texas took an important step toward addressing this problem when Coordinating Board Chairman Larry Temple appointed the Committee on Testing in August 1985. He asked the committee to consider the merits of a state testing program that would measure the basic skills of college students and provide a basis for improving the quality of higher education in Texas.

He also raised a number of questions for the committee to investigate: (1) What purpose should the tests serve? (2) What tests would be appropriate? (3) How would a statewide test affect institutions and students? (4) In what ways can institutions best assist students both before and after testing? (5) How should a test be selected or developed? (6) What are the costs of a testing program and who should bear these costs? (7) What uses should be made of the test data by institutions and the Coordinating Board?

He emphasized that the purpose of any testing program should not be to weed out or reduce the number of students in Texas colleges, but rather to provide a measurement of both the quality of the teaching and the quality of learning. He asked, "How can we improve the quality of the higher education product unless we know what product is actually being delivered and received?"

To carry out this mandate, committee members studied the status of basic skills among college students and the use of postsecondary testing and remediation programs in several states. The review included various types of tests and their merits, the impact of testing on minority students, the implications of requiring a test at the sophomore level, the effectiveness of remedial and developmental education programs, and the basic skills levels of college graduates from the point of view of employers in different industries.

Committee members held nine meetings, attended a national conference on testing in South Carolina, visited testing programs in Florida and New Jersey, and conducted five public hearings throughout Texas to obtain testimony from more than 50 educators, students, concerned citizens, and policymakers on the proposed testing program.

IDENTIFYING THE PROBLEM

The committee's first task was to identify the problem. We learned that Texas is not alone in experiencing a crisis in higher education. Across the nation there has been a serious decline in the ability of students to read, write, use mathematics, and think critically at the college-level. In New Jersey, for example, where reading, writing, computation, and elementary algebra skills of some 400,000 entering freshmen have been tested since 1978, test results consistently show that entering students' deficiencies range from 31 percent in verbal skills to 60 percent in algebra.

The ultimate burden of this failure is not borne by the schools but by America's businesses and industries. Thirty-seven percent of businesses participating in a recent national survey said they are forced to teach skills to their employees that the secondary schools should have taught. And three out of four major corporations are training new workers in basic reading, writing, and mathematics. Some economists are saying that, next year, businesses will hire more than a million people who lack the basic skills for the job. In fact, private corporations spend nearly as much on education and training for their employees each year as the nation's

colleges and universities spend on their students. In 1982, corporate education cost more than $60 billion. A significant portion of this expenditure each year is used for remedial courses in reading, writing, and mathematics. Many corporate managers are dissatisfied with the basic skills of their new employees. This dissatisfaction and other concerns about education were echoed by Texas employers who addressed the committee.

A bank vice president told the committee that while job applicants are well-trained in finance, they often fail to pass a screening for oral and written communication skills. He told of countless letters and resumés that are discarded on the basis of spelling, grammatical errors, or poor sentence structure.

A major aerospace corporation hires only top engineers from a carefully-screened list of colleges and universities across the nation, including two Texas institutions. Even so, this corporation is compelled to provide additional training in advanced problem solving. And, when it is time for some engineers to move into management, poor writing and verbal communication skills prevent many of them from being promoted to administrative positions.

Other employers reported similar problems:

-- One of the nation's largest insurance companies employs a full-time instructor to teach basic language and writing skills to employees, many of whom are college graduates.

-- A metropolitan police department reported that the basic skills of recruits are so poor that they have to teach new cadets how to write clear and understandable sentences just to be able to fill out accident reports. Police recruits also must be taught how to work relatively simple mathematics problems so that they can perform routine duties.

-- At another corporation, college graduates take five to six years on the job to learn appropriate problem-solving and critical-thinking skills.

-- A journalist reported on a survey of newspaper editors conducted by the Associated Press. What the survey showed was depressing. Apparently, journalism graduates don't have a broad enough education; their basic skills are insufficient, they lack a real world perspective, they have low reporting and writing skills, and they don't even have the newspaper-reading habit.

And employers all agreed on the need for improved grammar, punctuation, vocabulary, style, sentence structure, and spelling.

We hasten to point out that the committee sought comments about Texas college graduates in order to learn the extent of the basic skills problem. Our report deals with just one aspect of higher education and is not an indictment of the whole system. We learned in our studies that the academic programming in Texas and the overall ability of our students compare favorably with other states. There is much to praise, including an increasing awareness on the part of faculty and administrators across the state that reforms are needed. Indeed, improvements are already being made in many institutions, particularly in curriculum reform. Nonetheless, the basic skills problem is pervasive and, if left unattended, can have a detrimental impact on overall quality.

There is no simple explanation for the lack of basic skills among such a large number of college students. Clearly, part of the problem has been the rapid growth of our schools to accommodate the increasing population. Colleges and universities inherited the results of this growth: an erosion of quality. The National Commission on Excellence in Education reports that while the average United States citizen is "better educated today than a generation ago, the

average graduate of American high schools and colleges is less well educated."

During almost two decades of steady decline in college admissions test scores, the Educational Testing Service noted a pervasive trend which reflected fewer basic courses and more electives in high school, less thoughtful and critical reading, less careful writing, and a decline in the study of foreign languages. These factors are paralleled by reduced homework requirements, greater absenteeism, and automatic promotion from grade to grade.

EXAMINING POTENTIAL SOLUTIONS

There is a growing recognition of the problem across the country. Many states, among them New Jersey, Florida, Georgia, Maryland, Ohio, South Dakota, Tennessee, Missouri, and California, are attempting to overcome basic skills deficiences through assessment programs. We visited two of these states: New Jersey and Florida. The experience of both states makes it clear that testing and remediation must go hand in hand. There is no point in identifying problems unless there is a willingness to do something about them.

In New Jersey, all college and university students take the Basic Skills Assessment Test, which measures reading comprehension, sentence sense, computation, and elementary algebra. The test is given after admission to place entering students in appropriate courses. Results do not affect admission in any way. The state requests institutions to retest students at the end of the sophomore year on a voluntary basis. Enough institutions comply to make pre- and post-test evaluations possible.

The testing program provides New Jersey with enough information to define the problem and to identify the students in need of help. State colleges and universities follow up with remediation.

The program is working. Studies show that students who need and complete remedial programs have better retention rates and nearly comparable grades to students who did not need remediation in the first place. Furthermore, these students have a three-times greater chance for success in college than students who need remediation but do not complete it. Students who complete remediation show significant test score gains and pass their sophomore level courses at rates comparable to nonremedial students.

In Florida, students take the College Level Academic Skills Test (CLAST). This is a "rising junior" test commonly given during the second semester of the sophomore year to measure reading, writing, and math skills. Florida students in general have improved their test scores over the past two years. The most dramatic improvement is among minorities. Florida A&M University, an historically black institution, reported an increase in students passing the CLAST from 39 percent in 1983 to 61 percent in 1985.

The CLAST examination, which measures skills at approximately the tenth-grade level, has a graduated set of standards to be instituted between 1984 and 1989. This process was designed to enable Florida to accommodate the changes in graduation standards that the state has mandated for the secondary schools. The 1989 CLAST pass-fail standards will be tougher than the present ones.

Our committee learned from these visits that testing programs benefit all students, not just those who lack basic skills. These programs drive curriculum reform, they stimulate innovative teaching, and they motivate students. For those who need help, a testing and remediation program provides a tangible hope, a way to overcome deficiencies which students know they have.

COMMITTEE RECOMMENDATIONS

After ten months of study, the committee estimates that at least 30 percent of Texas students entering their freshman year in college are deficient in the basic skills of reading, writing, or mathematics that are needed in college. Too often these students are not identified; in turn, too few of them are helped. The need for testing and remediation is obvious. We must put an end to basic skills deficiencies for the sake of our young people, our universities, and our nation.

The Committee on Testing unanimously makes the following seven recommendations.

1. BASIC SKILLS TEST

We recommend that beginning in the fall of 1989, or as soon thereafter as feasible, all freshmen entering a public college or university in Texas be tested in reading, writing, and mathematics skills at levels required to perform effectively in college. The test should be uniform across institutions and should be administered after admission. In no case should such a test bar entry to any student otherwise qualified; this assessment should be a tool of the education process, not the selection process.

It is obvious that the first step in solving the basic skills problem is to identify those students who need help.

The only way to do this is to test them. And it is clear to the committee that the test ought to be given at the beginning of the college experience. We seriously considered the Florida "rising junior" exam, but we rejected it because it would mean losing two valuable years before identifying the students who really need help.

We recommend a college-level basic skills test to be administered by the college or university to new students after they have been accepted, to avoid influencing admission decisions, but with the condition that students must pass all parts of the test by the time they have earned 60 credit hours. Students who have not passed the test would be limited to enrollment in lower division courses until they pass it. This proposal combines the diagnostic and placement strengths of the New Jersey test with the effective exit measures of Florida's rising junior exam.

Diagnostic or placement testing is already employed in many Texas colleges and universities. More than half of the community and junior colleges test students' basic skills for placement in remedial programs, and many of the other community colleges are setting up similar programs. Of the senior universities, 44 percent require students to take placement tests in mathematics, 33 percent require placement

tests in English, and 19 percent require students to pass advancement tests in writing at the end of the sophomore year.

What are college-level skills?

There are different levels of basic skills and different measures to identify them. The difference between high school and college basic skills generally involves the mastery of specific content areas and the ability to reason at increasingly complex levels.

The College Board identifies six broad areas in which students should be competent to perform effectively in college: reading, writing, speaking and listening, mathematics, reasoning, and studying. Examples of these college-level basic skills include:

-- the ability to recognize different purposes and methods of writing, to identify a writer's point of view and tone, and to interpret a writer's meaning inferentially as well as literally;

-- the ability to vary one's writing style, including vocabulary and sentence structure, for different readers and purposes;

-- the ability to use effectively the mathematics of integers, fractions, and decimals; ratios, proportions, and percentages; roots and powers; algebra and geometry.

Why test everyone?

We recommend that all students be tested, even those who post good high school grades and score well on college entry exams. Testing experts tell us that neither high school grades nor entrance examination test scores are appropriate criteria for measuring basic skills. The committee is concerned about the legal implications that will arise if some students are required to take a basic skills test while others are exempted on the basis of such inappropriate criteria. Furthermore, there is no way to realize fully the magnitude of the problem or to provide adequate basic skills remediation until a single, valid test to assess college skills is administered statewide to all entering students.

Why not just raise entrance requirements at four-year institutions?

The students we are trying to help already meet the

entrance requirements of our colleges and universities but they are handicapped by their weaknesses in basic skills. Raising entrance requirements will not eliminate the problem; it will only eliminate some of the qualified students. Most state colleges and universities use entrance test scores or test scores and high school grades in some combination as the basis for admission. These selection methods reveal information about a student's innate ability and motivation but they do not, nor were they designed to, reveal deficiencies in basic skills. While raising entrance requirements might weed out those whose basic skills are weakest, it would also deprive thousands of able people of the chance to earn a baccalaureate degree. This would be a tragic mistake, especially for the growing number of minority students entering colleges and universities.

Why not use the ACT, SAT, or PPST for testing basic skills?

This is an attractive alternative, and the committee considered it seriously. However, every testing expert we talked with told us that scores on college entrance examinations are not accurate indicators of basic skills deficiencies. The test we propose would be diagnostic in

nature -- which the ACT Assessment (ACT) and the Scholastic Aptitude Test (SAT) are not -- and would detect such a weakness, making remediation and course placement possible.

Tests such as the Texas Education Assessment of Minimum Skills (TEAMS) and Florida's CLAST are designed to assess high school level skills rather than skills needed to perform effectively in college. At the other extreme, the SAT and the ACT are designed to measure achievement or aptitude beyond the college basic skills level. These tests are accepted measures for admission purposes since their strength is in their ability to predict a student's first-year performance. Such tests do not provide information on a well-defined set of skills that are either mastered or not mastered. Other tests -- such as the PPST -- are not constructed for diagnostic purposes either.

What will it take to pass the test?

The committee supports a state-wide minimum passing score to be established with the assistance of an advisory committee. All students would be required to achieve a minimum level of competency before graduation from a college or university, thus adding much-needed credibility to all

baccalaureate degrees conferred by state institutions. Individual institutions should have the option of setting their own passing scores which could be higher than the state minimum; in no case, however, should an institution accept a score lower than the state requirement.

2. ADVISING PROGRAMS

We recommend that colleges and universities develop strong advising programs so that appropriate course placement occurs early in the student's degree program.

A college advising program is an essential link between testing, identification, and remediation. The probability of success in college is increased by early identification of problem areas, followed by guidance toward appropriate support systems and remediation. The proposed testing program, with its strong advising component, makes early remediation and success much more probable.

Every freshman class contains some students who have charted their life's course -- young men and women who have specific goals and definite plans for achieving them. But such students are rare. Most college freshmen need advice to help them decide what specific courses to take or what general direction to follow.

For all students, advising is essential for course selection. Beyond that, it offers contact and support from a knowledgeable faculty or staff member, someone to turn to for advice and encouragement. It can make the difference between a negative college experience and a positive one, and many studies show that it is the key to retention.

It is evident that strong advising has suffered in these years of rapid enrollment expansion. As a consequence, students also have suffered. Colleges and universities must redouble their efforts to strengthen their advising programs and place more emphasis on individual student direction and support.

It also is evident that a testing program cannot stand alone. To be effective, it must be followed by advising that directs students toward the best course of skill development and learning available. In turn, this advising program must be followed by solid opportunities for remediation.

3. REMEDIAL OPPORTUNITIES

We recommend that each public institution be required to offer or make available nondegree credit remedial opportunities on its own campus to those students identified by the test as needing assistance.

If it is clear that strong advising must follow testing, it is just as clear that remediation must follow advising.

In this matter of basic skills, we have only three choices:

(1) Continue our present system and fail to provide a full education to thousands of students who have the native ability but not the skills for college;

(2) Weed out those who can't pass the entry-level basic skills test on the first attempt and, therefore, deny many bright students the chance for a college education; or

(3) Test all entering students, identify those who need help, and provide them the necessary remediation.

Why should colleges be doing the work of the public schools?

Ideally, basic skills should be developed throughout the school years. The state of Texas recently implemented far-reaching educational reforms in grades K through 12 which should insure the development of basic skills. These reforms include: tutorials, summer programs, pre-school programs, smaller classes, attendance standards, limits on extracurricular activities, and remedial instruction. However, their effectiveness reforms cannot be

measured until an entire school generation has experienced them. The first generation of students to be affected by public school reforms has not yet completed high school; it will be 12 years at best before students who receive the full benefit of these reforms complete high school and enter college.

All of these education reforms will have an impact on traditional college students who enter as freshman at age 18, but this is a group decreasing in number and percentage. Reforms will not have any effect on older students, who are attending college in increasing numbers each year. Many of these students will have bypassed the reforms.

It is not enough to wait for public school reforms to improve the quality of our high school graduates. Higher education must institute its own reforms if we are to prevent another generation of young people from being caught in a cycle of failure, if we are to remove the shadow that skill-deficient graduates cast on our diplomas.

Yet, there are those who say that it is not practical to provide basic skills instruction in colleges and universities. There are those who say that if our public schools cannot teach their students basic skills, there is nothing higher education can or should do about it. And

there are still others who say that if we must offer remedial instruction at the college level, it should be done by community and junior colleges even when the students needing remediation meet the entrance requirements of four-year institutions.

The committee finds these statements to be nothing more than excuses to maintain the status quo. We must intervene at every level. It is bad enough that our high schools are graduating students who are seriously deficient in reading or writing or computation, but it is inexcusable that our universities are graduating them with virtually the same deficiencies. The people of Texas have a right to expect a college education to have some meaning.

Why not let the community colleges handle the remediation?

The committee feels strongly that remediation needs to take place on the primary campus where the student is enrolled and under the supervision of that institution. An institution might wish to contract with a community college to deliver remediation, but students should not have to leave campus to receive it.

In the first place, many students will find it inconvenient to attend community colleges while they are enrolled at other institutions. Still others do not live close enough to a community college to make it feasible for them to receive remedial instruction this way.

But the primary reason for having remedial instruction offered on campus is to hold the institution accountable. We learned, particularly from the experience in New Jersey, that if the institution doesn't have the responsibility for providing the remediation, it doesn't have the incentive to be sure that it is done properly. We can't continue to let the universities wash their hands of the responsibility to see that deficiencies in basic skills among their students are corrected.

Does remediation really work for college students?

Studies show that underprepared college students who participate in basic skills courses show measurable gains in skill development -- and greater gains than similar students who do not participate in such courses. More progress has been measured in reading, study skills, and composition than in mathematics. Such courses seem to reduce the differences

between underprepared and better-prepared students, as measured by standardized tests. Further, students who participate in developmental programs often perform better academically than their admissions credentials would suggest. Students with low grade point averages, for example, tend to improve their grades beyond those predicted on the basis of high school grades and achievement test scores. Underprepared students who participate in developmental programs are more likely to remain in college than those who do not, and they often outperform better-prepared students who have superior admissions credentials. Remediation also contributes to persistence: the positive effects of developmental programs are greatest when the programs begin early in the students' college experience. They are least effective when started later than the freshman year.

How much remediation do our colleges and universities provide at present?

Texas community colleges are expected to offer remediation to students. Senior colleges can also offer six semester credit hours of remedial instruction. The state

supports this instruction through formula funding, although the courses do not count toward the hours required for a degree.

Most junior and senior colleges also provide nonformula-funded remedial opportunities such as learning assistance centers or writing or mathematics laboratories. The combination of credit and noncredit remedial opportunities makes it difficult to determine exactly how much remediation is currently offered. National data suggest that the majority of all universities have learning assistance courses or laboratories and that the number of remedial mathematics courses offered in four-year universities increased by 72 percent between 1975 and 1980.

A Coordinating Board study shows that Texas spent $37 million for remedial courses in the 1984 and 1985 biennium. The committee believes that the funds already devoted to remediation for college students can be more effectively spent with a statewide testing program. At present we have no true picture of the scope of the problem. Our current remediation, especially in senior colleges, suffers from a lack of direction. We have applied a bandage without knowing the extent of the wound.

4. REQUIRED REMEDIATION

We recommend that remediation be required when a component of the basic skills test is failed. All components of the test must be passed on or before the completion of 60 semester credit hours of degree credit. If not, further course work would be limited to lower division courses until all components of the test have been passed.

Even if remedial opportunities are available on all campuses, most students will not take advantage of them unless they are required to do so.

Each institution should be able to offer programs designed to meet the needs of its students. One of the most cost-effective forms of remediation, and one already in place in many Texas institutions, is the traditional college course which can serve a number of students simultaneously. Many students, however, because of individual learning styles, familiarity with the course content, or the pace of the course, need other forms of remediation in addition to or in place of these courses.

Learning and study skills laboratories frequently supplement classroom instruction by offering tutorial services, computer-assisted instruction, and programmed or modular materials. Learning labs, counseling centers, and student development offices frequently offer noncredit minicourses that focus on study skills, testing skills,

reading improvement, and test-anxiety reduction. Tutorials can be offered in residence halls and special study halls. Many institutions with a high percentage of commuter students make portable remediation programs available for students to work on at home.

What happens if teachers "teach to the test?"

All remediation programs, regardless of how they are delivered, should provide students with feedback on their skill development progress. Because skill mastery rather than content knowledge is tested, "teaching to the test" is appropriate for a basic skills program. Students need numerous opportunities to practice and to be evaluated on the skills they are learning.

Why should failing this test prevent students from advancing to upper-level work?

Research and experience indicate that with adequate supporting resources, a large percentage of the students identified by the test as skill-deficient can effectively overcome the deficit if they are motivated to learn the

skills they lack. The requirement to pass all sections of the test on or before the completion of 60 hours of degree-credit work or before advancing to upper-level work should be a sufficient motivator. It will insure that a degree from a Texas institution of higher education stands for college-level skill proficiencies in reading, writing, and mathematics in addition to the content knowledge acquired in specific fields of study.

Most importantly, if all students have mastered the basic skills, the entire instructional experience is strengthened and the quality of higher education for all students is improved. The students who testified before the committee offered strong support for a testing and remediation program which would place students on a more equal footing in the classroom. They complained that fellow students who lack skills tend to require too much instruction time in class, thus reducing the effectiveness of instruction for others. The only way to overcome this criticism is to require students who need remedial work to take it promptly and to demonstrate skill mastery early in their college work.

5. EVALUATION

We recommend that each college and university be required to evaluate the results and effectiveness of remediation and report annually to the Coordinating Board.

Annual evaluation is used to determine a program's overall effectiveness -- its success in meeting established goals. If we are going to place the responsibility of remediation with the individual institution, we need a way to determine the effectiveness of these remediation programs. Evaluation eliminates guesswork and anecdotal reporting and replaces assumptions with accepted forms of measurement. Several states, for example, have found that a testing and remediation program not only improves the basic skills of students, but it also increases their retention in college.

Evaluation verified the success of the New Jersey program. In its January 1985 report on the "Effectiveness of Remedial Programs," the New Jersey Basic Skills Council reported that retention rates were higher for students completing remediation than for students who did not need remediation. Seventy-five percent of state college students and 55 percent of community college students who completed their remedial sequences were enrolled in the fourth semester, compared with 70 percent and 51 percent of

nonremedial students in the respective college sectors. The report emphasizes that skills-deficient students who complete the appropriate remedial course sequence have a far greater chance of college success than students who do not complete remediation.

The committee predicts that the Texas program also will show improved retention. The number of students helped, the extent of their skills development, and the cost effectiveness of the program must be quantified. We believe an annual evaluation and report of the testing program is essential to substantiate the gains made and to use as a basis for future plans.

6. TEST DEVELOPMENT

We recommend that the Coordinating Board be directed to have these tests developed with the active participation at the decision-making level of faculty members from Texas colleges and universities.

For the proposed program, standardized tests must be selected or developed to assess students' basic skills of mathematics, reading comprehension, and writing needed to perform effectively at the college level. An advisory committee that includes faculty representatives should be established to guide the development and approve the content of the tests.

Advisory committee tasks should include specifying the skills to be measured and the levels of proficiency to be required, as well as reviewing tests and test items for recommendation to the Coordinating Board. It should be their responsibility to recommend whether test components be norm-referenced or criterion-referenced, to assist institutions in planning for computer-adaptive versions of the test, to assure that the test has no cultural bias, and to establish a statewide minimum cut-off score.

Faculty involvement in the basic skills testing program is crucial. In visits to New Jersey and Florida and in consultations with personnel in other states, we learned that faculty participation is essential for program excellence, for widespread acceptance of a basic skills testing program, and for acceptance of the whole concept of testing and remediation.

Of all the tests reviewed, the New Jersey College Basic Skills Placement Test is most similar to the type envisioned by this committee. Since the Texas test also would be used to diagnose basic skills deficiencies and to place students in appropriate remediation programs, it might even be economically prudent to study the feasibility of using the New Jersey test in its existing or in a modified form to meet

the specifications outlined by Texas faculty members before steps are taken to create a new test.

We feel strongly that all institutions, community colleges as well as senior universities, employ the same basic skills test. This will enable educators to compare data across institutions and to answer questions concerning such topics as entry standards and institutional accountability on a state as well as an institutional level.

How will the test impact minority students?

A crucial question for the state of Texas is the effect of testing on different ethnic groups. Any test adopted by the state must be free of bias.

The committee spent considerable time addressing this issue. In meetings with experts from across the nation, we asked repeatedly if tests could be devised that are devoid of ethnic bias. We were told that they can and they are. This issue is important today, and it will be more so in the future.

Texas demographics are changing rapidly. By the year 2000, Hispanics and blacks will form a majority of the population. Yet, both black and Hispanic students are

underrepresented at all levels of postsecondary education. All programs designed to improve higher education must offer appropriate curriculum reform and provide support to minority students to assure both their preparation for and their access to a college education of high quality.

The academic performance of minority students has been improving steadily. On the SAT, the scores of the nation's black students continue to increase. This year, Hispanic students had the strongest gain in average SAT scores in more than two decades. The gap in scores between black, Hispanic, and white students is still large, but it is shrinking.

A common explanation for this reversal is that educational reforms put in place in public schools a school generation ago are finally showing their effects. This appears to be true in Texas. At Lincoln High School in Port Arthur, the valedictorian of this year's graduating class and many other top students were graduates of the Head Start program 12 years ago.

The committee was told repeatedly that the greatest benefits from testing and remediation were reaped by minority students. In Florida, where increases in basic skills were shown for all groups, the university with the greatest gains was Florida A&M, a traditionally black college. Students

with poor elementary and secondary education, when identified early in their college years, often prove willing and able to increase their skills and their knowledge.

We expect that Texas colleges and universities will respond to basic skills test results as they have to PPST results. In institutions with appropriate advising, counseling, learning assistance, and course placement programs, the pass rates and scores of minority students rose the second year of the PPST. Texas results of special programming seem to parallel national results: when we improve services and curricula, performance improves.

7. PROGRAM FUNDING

We recommend that the legislature provide the necessary funding to develop and administer the tests and to support remediation. We would oppose a statewide basic skills test without the necessary financial support, especially for remediation.

Public education is based on the premise that educated and enlightened citizens are vital to the nation's well-being. The cost of public education in Texas is shared by all Texans. Since a basic skills testing and remediation program would be an integral part of public higher education, the cost should logically be borne by the state. We are firm

in recommending state support. Unless the legislature is willing to appropriate funds for this program, particularly for the remediation part of the program, none of these recommendations should be initiated. To ask institutions to bear the increased cost is to take scarce resources away from the students who do not need remediation.

Moreover, the number of students who would be tested each year -- more than 110,000 new students -- is so large that colleges and universities cannot carry the burden with present funding. The major obstacle in accomplishing the objectives of the Florida testing and remediation program has been the lack of state support.

How much are we spending now?

Only part of the cost to provide remediation to currently enrolled students is funded through the state formula system for higher education -- through semester credit hours generated at senior colleges and universities and contact hours at two-year institutions. Almost every state university conducts six semester credit hours of remedial courses in writing, related language skills, and mathematics. In FY 1985, $14 million was distributed to

two-year institutions, and more than $4 million to 23 state universities for remedial courses. In the fall semester 1984, 54,000 students in two-year schools and 21,000 others in four-year institutions were enrolled in remedial courses.

At present only one remedial course in English and one in mathematics can be covered under formula funding for the state universities. It should be noted, however, that some additional flexibility will be required if these universities are to make the best use of their remedial course work.

Without knowing how many students may be required to take remedial work and precisely which methods they might need, the committee is unable to offer more than estimates of the additional funds required to support the program we recommend. We assume that the total formula support to institutions will not change. Students who take remedial courses will forego taking some other formula-funded course; their average semester credit-hour load will not increase.

Academic advisement to 110,400 entering freshmen probably could cost the state $4 million a year in salaries and benefits if professional counselors are employed statewide. Costs are greater if faculty members provide advisement. Since most colleges and universities are already

providing advising -- some better than others -- some of the cost for advisement to support the basic skills testing program would not be new for the state.

Assuming the present state formula is adequate for classroom remedial instruction, we would still fall short of funds to cover the costs of other forms of remediation. Testing centers, learning assistance centers, tutorial programs, and writing and math laboratories -- all important academic support services -- are not directly funded. In institutions where these kinds of operations exist, they exist at the expense of other programs. In too many instances, they do not exist at all because of the scarcity of funds. Yet these programs can reach thousands of students who may not require classroom instruction or may need more than a large classroom can offer.

Because of the way such programs operate on individual campuses and since they are not considered a separate cost item in formula funding, we do not know how many students across the state are served by them, nor do we know their cost. Almost ten percent of the undergraduate student enrollment at one large state university take advantage of the testing center, learning assistance center, writing and math labs, or special tutorial services. If services were

available to meet student demand, that percentage would double. The university estimates that for every student participating in these services, $250 is spent each year, but these services are underfunded already and cannot meet student demand, let alone absorb additional responsibilities.

How much support is needed?

The testing and remediation program will require additional state support for two purposes: supplemental noncredit academic services and test development and implementation. We recommend the development of an additional formula to cover the cost of supplemental support services. Such a formula could be based on a minimum number of contact hours and should be structured to provide at least $200 a year for each student who meets the minimum contact hour requirement. These funds would support testing centers, learning labs, and other academic support services. It should be noted that this does not include the cost of additional advising, which is very difficult to estimate.

Without good information on the number of students who might require remedial support services, we can only estimate specific cost figures. Of the 30,000 entering students who

are expected to enroll in formal classroom remediation, about one-third of them will need additional remedial assistance. In that case, about 10,000 students statewide at a cost of $200 a year would require $2 million in additional state support.

State support also is needed for developing and implementing the basic skills test for an estimated 110,400 students entering state colleges and universities each year. Some of these students will be required to retake the test in order to fulfill the state requirements. The committee is informed that it will cost almost $500,000 to develop the basic skills test over the FY 88-89 biennium and almost $6 million in the following biennium to implement the test. In addition, operating costs for program and staff support will cost approximately $500,000 each biennium. Cost estimates are presented in Table 1.

Our strong preference is that the state pay all costs associated with the basic skills test. In our judgment this diagnostic tool is so fundamental that it cannot be separated from the instructional program.

A much less desirable alternative to full state support would be to pass the costs of testing on to students, either through a fee levied by the institution or as a direct

TABLE I

ESTIMATED COSTS[1]

	FY 88	FY 89	FY 90	FY 91
TEST DEVELOPMENT/ADMINISTRATION				
Test Development	$ 300,000	$ 100,000	$ 100,000	$ 100,000
Administration: scoring, reporting at $15 per student[2]	0	0	1,656,000	1,656,000
Test retake cost	0	0	1,200,000	1,200,000
Advisory Committee expenses	40,000	40,000	10,000	10,000
SUBTOTAL	$ 340,000	$ 140,000	$2,966,000	$2,966,000
SUPPLEMENTAL ACADEMIC SERVICES	0	0	$2,000,000	$2,000,000
COORDINATING BOARD EXPENSES				
Program Staff:	$ 115,000	$ 115,000	$ 160,000	$ 160,000
Office operations:	110,000	110,000	115,000	115,000
SUBTOTAL	$ 225,000	$ 225,000	$ 275,000	$ 275,000
GRAND TOTAL	$ 565,000	$ 365,000	$5,241,000	$5,241,000
BIENNIUM TOTALS	$ 930,000		$10,482,000	

[1]These costs do not reflect additional costs for advising.

[2]Based on estimated 110,400 entering students, 5 percent of whom have fees waived.

payment to a testing service. We estimate the cost of testing to be $15 per student. About five percent of students taking the test would have the cost waived because of financial hardship. Under this arrangement, students would pay $2.7 million in FY 90, reducing state costs for testing in that year to $2.5 million, as noted in Table 2.

Without accounting for increases in enrollment in formula-funded remedial courses, which are likely to occur, but which should not increase total funds for higher education, total costs for testing, supplemental academic services, and operating expenses could cost the state an additional $5.2 million a year for higher education beginning in FY 1990. The committee acknowledges the burden this places on limited state resources, particularly at a time when revenues are declining. But we urge the state not to be tempted to fund one aspect of the program without the other. The two -- testing and remediation -- are inseparable. To discover inadequacies in basic skills and ignore the need to correct them is self-defeating. Similarly, to provide remedial work haphazardly is inefficient and probably ineffective.

TABLE 2

ESTIMATED COSTS WITH STUDENT PAYMENTS

Projected Costs	FY 88	FY 89	FY 90	FY 91
Test Development/ Administration[1]	$ 340,000	$ 140,000	$ 2,966,000	$ 2,966,000
Coordinating Board Expenses	225,000	225,000	275,000	275,000
Supplemental Academic Services	0	0	2,000,000	2,000,000
SUBTOTAL	$ 565,000	$ 365,000	$ 5,241,000	$ 5,241,000
Less Student Payments				
Initial Testing	0	0	< 1,573,200>	< 1,573,200>
Retakes	0	0	< 1,140,000>	< 1,140,000>
SUBTOTAL	0	0	< 2,713,200>	< 2,713,200>
State Support Required	$ 565,000	$ 365,000	$ 2,527,800	$ 2,527,800
BIENNIUM TOTALS	$ 930,000		$5,055,600	

[1]Based on 110,400 entering students @ $15.00 each, less 5% for whom fees are waived.

What happens if we don't provide this program?

We ask the state to examine the cost of not supporting basic skills in higher education as carefully as it will examine the cost of implementing these recommendations. As Texas moves from an economy based on oil, gas, and agriculture to one in which diversification, including technology, is the cornerstone, a well-educated workforce is fundamental. Admiral Bobby Ray Inman, president of Microelectronics and Computer Technology Corporation (MCC), told a San Antonio audience recently, "We are going to have to make the investments now to produce the human resources and infrastructure that will be necessary to carry the technology push in the 1990s."

Texas must improve education across the board to meet the requirements of tomorrow's economy. We have taken the first step in the education reforms of 1984. Now we must take the next step; we must provide for those students who simply have not mastered the skills needed to perform effectively in higher education. Diagnostic testing and remediation for those who need it are basic to that process. We have learned from other states that remediation works, and in Texas one estimate suggests that it could mean an

additional 13,000 college graduates available in our workforce each year and many thousands more with stronger skills.

The state benefits also from the increase in personal income which accrues to those with college degrees. Personal income rises significantly with educational attainment, particularly for minority groups. In 1973, each additional year of schooling raised the average annual earnings of black and Hispanic workers by about three percent. In 1980 the incremental benefit of education was about four percent for blacks, while Hispanics and whites earned a premium of six to seven percent. Historically, studies have shown that among all males (at age 42), college graduates earn 50 percent more than high school graduates.

CONCLUSION

More than 30,000 Texas high school graduates enter higher education each year without having mastered the skills needed to perform effectively at the college level. These are students who meet the admission requirements of our colleges and universities; many of them have posted good scores on college entrance examinations. Some of them

graduate with good marks in their majors but they are woefully deficient in reading, writing, or mathematics.

Required examinations, especially in writing and English language usage, are not uncommon in higher education in the state. Many Texas colleges and universities already ask students to demonstrate proficiencies in some skill areas before graduation from college. Still, such arrangements are scattered and have no commonality. A passing grade at one institution may not be adequate at another. This sporadic approach to basic skills testing is both inefficient and inadequate. Worse, without knowing who is deficient in basic skills, we are turning out college graduates who cannot write a clear sentence, cannot comprehend complex written materials, and cannot use mathematics effectively. Employers are criticizing colleges and universities for the poor quality of some graduates, and in some cases, the integrity of the degree is questioned.

Early identification of and appropriate instruction for these students are essential to the health of the state's educational system and are absolutely necessary for the intellectual development of our students. The high school exit examination (TEAMS) will identify those students who are the most deficient before they graduate, but this test will

not screen for skills needed in college because it tests for lower level basic skills.

Are we testing too much?

There is some concern that we are testing students too much. The committee believes that ultimately the benefits of a standardized statewide testing program will override these concerns. For one thing, it would replace existing institutional testing and placement programs, thus eliminating some local testing. For another, the benefits to the individual student are expected to compensate for the disadvantage of taking another test. This was the case in New Jersey and Florida, and we can expect our students to react similarly. In any event, frequent testing is an accepted and integral part of our educational system.

We believe that the program outlined in these recommendations is the most effective way of dealing with basic skills deficiencies among college students. Though we recognize the rights of institutions and governing boards to develop curricula and instructional policies, the critical need to identify and instruct these students is so great that it demands a statewide solution. We cannot afford another generation of failure.

REFERENCES

Academic preparation for college: What students need to know and be able to do. (1983) New York: The College Board.

Blankmeyer, E. (1986) Remedial courses in higher education in Texas: An outline of benefits and costs. Unpublished manuscript, Southwest Texas State University, Department of Finance and Economics, San Marcos.

Boylan, H.R. Is developmental education really working - An analysis of the research. (1983) Chicago: National Association for Developmental Education.

Kulik, C.C., Kulik, J.H. and Shwalb, B.J. (1983) College programs for high-risk and disadvantaged students: A meta analysis of findings. Review of Educational Research.

The National Commission on Excellence in Education. (1983) A nation at risk: The imperative for educational reform. Washington, D.C.: Department of Education.

New Jersey Basic Skills Council. Effectiveness of remedial programs in New Jersey public colleges and universities: Fall 1982-spring 1984. Newark: Department of Education.

On further examination: Report of the advisory panel on the Scholastic Aptitude Test score decline. (1977) New York: The College Entrance Examination Board.

Southern Regional Education Board. (1985) Access to quality undergraduate education. Atlanta, GA: Southern Regional Education Board.

COMMITTEE ITINERARY

August 27, 1985 -- Coordinating Board, Austin, Texas. First committee meeting. Speakers: Mr. Robert L. Hardesty on the nature and importance of the committee's work; Mr. Larry Temple on the charge of the committee; Dr. Joan Matthews on postsecondary testing programs across the nation.

September 19, 1985 -- Coordinating Board, Austin, Texas. Second committee meeting. Speakers: Mr. John Fainter on the Texas Desegregation Plan; Dr. Paul Kelley on major concepts and issues related to testing.

October 13-15, 1985 -- Columbia, South Carolina. National Conference on Assessment in Higher Education attended by Drs. Kelley, Matthews, Raffeld, Williams, Mr. Hardesty, and Ms. Plessala.

October 18, 1985 -- Coordinating Board, Austin, Texas. Third committee meeting. Speakers: Dr. Marvin Veselka on the Texas Educational Assessment of Minimum Skills (TEAMS) test and the Pre-Professional Skills Tests (PPST); Mr. Hardesty on the National Conference on Assessment in Higher Education.

November 11, 1985 -- Coordinating Board, Austin, Texas. Fourth committee meeting. Speakers: Dr. Paul Raffeld on the Regents' test of Georgia; Dr. Myron Blee on the College Level Academic Skills Test (CLAST) in Florida; Dr. Joan Matthews on the Northeast Missouri State University value-added testing program; Dr. Anthony Lutkus on the New Jersey Basic Skills Project.

December 12, 1985 -- Coordinating Board, Austin, Texas. Fifth committee meeting. Speakers: Ms. Laurie Plessala on students' views on testing; Dr. James Popham on test bias and the impact of testing on minority students; Dr. Anita McDonald on the efficacy of developmental preparation programs and the impact of testing on minority students.

January 10, 1986 -- Coordinating Board, Austin, Texas. Sixth committee meeting. Speakers: Mr. Jeff Bruce from the Austin-American Statesman; Mr. Charles Simpson from MBank Austin; Ms. Beth Pyndus from USAA: Mr. William Flick from Lockheed; Captain Robert Shirley from the Austin Police Department.

January 27-29, 1986 -- Trip to Florida made by Drs. Kelley, Matthews, Nevarez, Williams, Ms. Dochen, Mr. Hardesty, Sr. Sueltenfuss, and Mr. Vasquez. Met with the following people about the CLAST:

The Honorable Robert Graham, Governor, State of Florida
Ms. Shelley Boone, Deputy Commissioner for Special Programs, State of Florida
Dr. Myron Blee, CLAST Manager
Dr. Bruce Mitchell, Director of Academic Programs, Division of Universities, State of Florida
Dr. William Proctor, Executive Director -- Division of Community Colleges, State of Florida

We visited the following institutions (only our host is listed by name):

Florida Agricultural and Mechanical Univ. -- Dr. Eva Wanton, Dean of General Studies
Tallahassee Community College -- Dr. Perry Adams, Dean
Florida State University -- Dr. Augustus Turnbull, Vice President for Academic Affairs
St. Petersburg Junior College -- Dr. Ernest Ross, Dean of Academic Services
University of South Florida -- Dr. William Schuerele, Dean of Undergraduate Studies/Academic Affairs
Miami-Dade Community College -- Dr. Piedad Robertson, Vice President for Education
Florida International University -- Mr. William Beesting, Assistant to the Dean of Undergraduate Studies

February 10-11, 1986 -- Trip to New Jersey made by Drs. Clarkson (for Spearman), Magner, Matthews, Raffeld, Shaw, Ms. Dochen and Ms. Plessala. We met with Dr. T. Edward Hollander, Chancellor of Higher Education and Dr. Anthony Lutkus, Director of Basic Skills Testing Program.

We visited the following institutions (only our host is listed by name):

New Jersey Institute of Technology -- Dr. Edward Morante, Director of the Counseling Center
Rutgers, Newark campus -- Dr. David Hosford, Dean of Arts and Sciences
Essex County College -- Dr. Rupert Jemott, Dean of Academic Affairs
Trenton State College -- Dr. Anthony Evangelisto, Director of Academic Development Instructional Program.

February 23, 1986 -- Corpus Christi, Texas. Seventh committee meeting. Committee members travelling to Florida and New Jersey reported on their trips.

February 24, 1986 -- Corpus Christi, Texas. First public hearing, hosted by Corpus Christi State University.

March 14, 1986 -- Arlington, Texas. Second public hearing, hosted by The University of Texas at Arlington.

March 31, 1986 -- Lubbock, Texas. Third public hearing, hosted by Texas Tech University.

April 22, 1986 -- Austin, Texas. Fourth public hearing, hosted by the Coordinating Board.

May 5, 1986 -- Houston, Texas. Fifth public hearing, hosted by Texas Southern University.

May 5, 1986 -- Texas Southern University, Houston, Texas. Eighth committee meeting. Draft preliminary recommendation.

May 19, 1986 -- Southwest Texas State University, San Marcos, Texas. Final committee meeting. Final recommendations were written and unanimously adopted.

ACKNOWLEDGEMENTS

Assistance

Dr. Eric Blankmeyer, Associate Professor, Finance and Economics, Southwest Texas State University
Dr. Llayron Clarkson, Professor, Texas Southern University and former Vice President for Academic Affairs
Mr. James English, Superintendent, Kennard Independent School District
Dr. Mary Griffith, Program Director, Coordinating Board
Ms. Susan Griffith, Planning Analyst, Southwest Texas State University
Dr. Paul Gowens, Dean, School of Business, Southwest Texas State University
Ms. Colleen Klein, Coordinating Board Secretary
Ms. Jane Koepp, Coordinating Board Secretary
Dr. Paul Raffeld, Director, Southwest Texas State University Testing Center
Ms. Denise Watts, Director of Planning and Analysis, Southwest Texas State University

Consultants

Dr. Myron Blee, Director, College Level Academic Skills Test (Florida)
Mr. Jeff Bruce, Managing Editor, Austin American-Statesman
Mr. John Fainter, Attorney, Austin
Mr. William Flick, Vice President for Operations, Lockheed Corporation, Austin Division
Dr. Anthony Lutkus, Director, New Jersey College Basic Skills Placement Testing Program
Dr. Anita McDonald, Associate Dean, University of Missouri-St. Louis and Past President, National Association of Developmental Educators
Dr. James Popham, Professor of Education, University of California at Los Angeles
Ms. Beth Pyndus, Instructor, United Services Automobile Association, San Antonio
Captain Robert Shirley, Austin Police Department
Mr. Charles Simpson, Senior Vice President for Loans, MBank, Austin

Testimony - Corpus Christi 2-25-86

Dr. Wallace Davis, Dean, College of Education, Corpus Christi State University
Dr. William Davis, Instructor, Texas Southmost College and Past President, Faculty Association
Mr. Al Kauffman, Attorney, Mexican American Legal Defense and Educational Fund
Mr. Jim Maloney, Vice President for Finance, Lantana Corporation

Dr. Kevin Morse, Professor of Education, Pan American University
Mr. Michael R. Putegnot, Vice Chair, Texas Southmost College Board of Trustees (statement read by Dr. William Davis)
Mr. Mike Stewart, Vice President for Administration, Lantana Corporation
Dr. O. Rex Whiteside, Academic Dean, Victoria College
Dr. Carlton Williams, Vice President of Instruction, Del Mar College
Dr. Roger Worsley, President, Laredo Junior College

Testimony -- UT-Arlington 3-14-86

Dr. Wilkes Berry, Provost of the University, Texas Woman's University
Dr. Joe E. Cude, Chair, Department of Mathematics and Physics, Tarleton State University
Dr. Norbert Elliott, Professor of Literature and Languages, East Texas State University
Dr. Tom Hinkson, Assistant Vice President for Academic Affairs, Tarleton State University
Dr. R. Jan LeCroy, Chancellor, Dallas County Community College District
Dr. Dennis Michaelis, President, Paris Junior College
Dr. Charlotte Phillips, Coordinator of Developmental Studies, Henderson County College, and President, Texas Association of Developmental Educators
Dr. Maximo Plata, Coordinator, Professor of Special Education, East Texas State University
Mr. Walter Price, President, Student Congress, The University of Texas at Arlington
Mr. Jimmie C. Styles, Vice Chancellor, Tarrant County Junior College District
Dr. Paul Zelhart, Associate Vice President for Academic Programs and Services, East Texas State University

Testimony -- Texas Tech University 3-31-86

Ms. Cindy Barela, student, Texas Tech University
Mr. Gracey Cates, Southwestern Public Service, Lubbock
Dr. Bill Dean, Director, Texas Tech Ex-Students Association
Dr. Ken Van Doren, Graduate Dean, West Texas State University
Mr. David Fishner, Vice President, Student Association, Texas Tech University
Mr. Duane Hood, Dean of Student Services, Western Texas College
Dr. Teddy Lanford, Dean of School of Nursing, Texas Tech University Health Sciences Center School of Nursing
Mr. Joe Minkley, Senior Vice President/Personnel Director, First National Bank, Lubbock
Ms. Gail Platt, South Plains College, Levelland
Dr. Philip T. Speegle, President, Odessa College

Mr. Nolen Swain, Division Personnel Manager, Southwestern Public Service, Amarillo
Mr. Darrell L. Vines, Associate Dean of Undergraduate Programs in Engineering, Texas Tech University

Testimony -- Austin 4-22-86

Dr. T. Dary Erwin, Associate Director of Measurement and Research Services, Texas A&M University
Dr. John R. Grable, Vice President, Brazosport College and President, Texas Association of Junior and Community College Instructional Administrators
Mr. Mark Heatherington, Vice President-elect, United Students' Association, East Texas State University
Dr. Clay G. Johnson, Vice President for Instruction, Texas State Technical Institute
Dr. De Johnson, Acting Dean, College of General Studies, Southwest Texas State University
Mr. Neal Kocurek, Vice President, Technical Staff, Radian Corporation
Mr. Rob Patterson, President Associated Student Government, Southwest Texas State University
Dr. Roberto Reyes, Dean of College and Community Educational Development, El Paso Community College
Mr. Michael Smith, Vice President of United Students Association, East Texas State University and Vice President of Texas State Students Association
Dr. Belle Wheelan, Director of Developmental Education, San Antonio College

Testimony -- Texas Southern University 5-5-86

Dr. L. L. Clarkson, Chair, Texas Southern University Committee on Testing
Dr. Elbert Hutchins, President, Wharton County Junior College
Dr. John Kerrigan, Vice Chancellor for Academic Affairs, University of Houston Downtown
Mr. Aubrey Lewis, Director of Assessment Services, Southwest Region, American College Testing Programs, Inc.
Dr. William Moore, Vice President for Academic Affairs, Texas Southern University
Mr. Charles W. Nix, Assistant Superintendent for Instruction, McAllen Independent School District
Dr. Gerald E. Osborne, Director of Counseling and Testing, University of Houston University Park
Ms. Teresa Phillips, President, Texas Association of Collegiate Registrars and Admissions Officers
Dr. Edward Powell, Professor, Department of Sociology, Texas Southern University
Ms. Carol Ritter, parent
Dr. R. Hugh Walker, Vice President for Academic Affairs, University of Houston System